macromedia
COLDFUSION 5
The Fastest Way to Build and Deploy Powerful Web Applications

CF5 Hidden Gems

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Agenda

- **What's new in ColdFusion 5 that you may have missed**
  - May have heard about "top 15" things promoted
  - Will show more than 30 other new features
    - Including aspects of the top 15 that you may have missed
- **Will also show some issues to note**
  - Some (but not all) of the challenges you may encounter
- **Where to learn more**
  - Dozens of available resources
- **Q&A**

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"Top 15" Things New in CF5

- **You've probably heard of these**
  - User-defined functions
  - Query of queries
  - CFGRAPH
  - CFREPORT
  - New Verity K2 engine
  - Enhanced administrator interface
  - Log file mgt, server reports, app monitoring
  - App archive/deploy/restore
  - Enhanced performance, reduced resources

More "Top 15" New Things

- **And these**
  - Available Merant Wire Protocol ODBC Protocol Drivers
  - CFFLUSH available to force output to browser early
  - CFFORM applets enhanced in several ways
  - CFDUMP can display any variable/query/structure
  - CFSAVECONTENT can save content between its tags for further processing

What You May Have Missed

- **But did you know about these things:**
  - UDF libraries
  - The many things a "Query of Queries" can query
    - And some issues in working with QoQ
  - CFGRAPH supports drill downs
    - And can query anything that produces a resultset
    - And some issues in working with CFGRAPH
  - New Verity K2 Engine supports spidering
    - And CF performs locking during index operations
  - Can add new menu options to CF Administrator
  - Can use app archive/restore for more than you may think

What You May Have Missed

- **And these?**
  - Merant drivers available for text file manipulation
    - Docs available but not obvious
  - CFFLUSH can be used to create "progress meters"
  - CFFORM supports regular expression validation
    - Has nothing to do with the applets (and their troubles)
  - CFDUMP output is not just a static display of data
  - CFSAVECONTENT can be used for caching only a particular "part" of a page
    - Versus CFCACHE which caches the whole page
  - And a couple dozen other "minor" enhancements
- **And subtleties with some that are challenging**

Will Discuss Those

- **Presentation slot originally 1.5 hours**
  – Plan to cover all, but may not have time
- **Slides will be available on conference web site**
  – So you can follow on your own if we don't
- **Planning to write article based on these**
  – May be on new Macromedia DesDev site
- **Have day-long seminar on these and all other aspects of CF5, "CF5 in Depth"**
  – More information at www.systemanage.com

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UDF Libraries

- **May have heard about cool new UDF capability**
- **But did you know about**
  – CFLib.org Common Function Library Project
    - An open source resource for useful UDF's
    - Several categories, more than 50 UDF's already
      – String Manipulation (formatting, list processing)
      – Data Manipulation (query result processing)
      – Security (string hashing)
      – Math (geometric, statistical, scientific, general)
      – Date, Financial, FileSys, Science, & Utility now added
  – Also Granularity.com's UDF library for XML
    - http://chapterhouse.granularity.net/udf/xml/
  – Also see the Macromedia Developer's Exchange

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The Many Things a "Query of Queries" Can Query

- **May have heard about QoQ**
  - And its ability to query disparate datasources
    - Join Access and Oracle queries, for instance
  - Value in querying a previous query on same page
    - Subset or summarize a previous query, for instance
  - Or even querying a cached query
    - Perhaps to join a cached lookup table
- **But did you know**
  - Did you know you can query the output of _any_ tag that creates a resultset?

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Query Against Other Results

- **Can query against any result set**
  - Obviously, CFQUERY creates a query result set
  - What else does?

CFStoredProc	**CFSearch**
CFLDAP	**CFPOP**
CFDirectory	**CFFTP**
CFHTTP	**CFWDDX**

  - and querynew function
- **Let's see an example on next slide…**

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Query of CFDIRECTORY

- **Can use query of queries against more than just CFQUERY results**

```
<CFDIRECTORY ACTION="LIST" DIRECTORY="#expandpath(".")#" NAME="getfiles">

<cfquery DBTYPE="query" NAME="getonlyfiles">
         select * from getfiles
         where type = 'File'
</cfquery>

<cfquery DBTYPE="query" NAME="gettotal">
         select sum(size) as total from getonlyfiles
</cfquery>

<h4>Directory Total Size in Bytes:
<cfoutput>#numberformat(gettotal.total)#</cfoutput>
</h4>

<p>

<cfdump VAR="#getonlyfiles#">
```

Query of Query Ideas

- **Be creative, many possibilities!**
  - Cross-reference data in verity search result against a database
  - Find all mail msgs on POP server by search of subject
  - Sum the size of files within a directory
    - locally with CFDirectory Action="List"
    - remotely with CFFTP Action="ListDir"
  - Query against the results done on another server and transmitted to this server via WDDX
  - Query against a recordset created with CFHTTP NAME="" attribute
    - Which can read in text files, such as CSV format

Query of Queries Issues

- **Be careful not to use it where a single join or nested query would suffice**
- **See more in last section of Chapter 3, *Developing CF Applications***
- **Upgrade Issues: Troubleshooting Query of Queries Errors (KB 21873)**
  - Addresses various challenges that may stump you

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Query of Queries Issues

- **Undocumented issues**
  - WHERE clause string "matching" in QofQ is case-sensitive
    - but matching in other ODBC drivers is not case-sensitive
  - Can perform only a single join
    - For instance, can't join DB, LDAP, and POP searches
  - Doesn't support ODBC-formatted dates
    - Gets error "Can't find symbol: {d"
    - Need to do something like:
      ```
      WHERE startdate > '1995-01-01'
      ```
    - May need to use dateformat function to convert to this format
  - Can't sort on a column unless it is SELECTed as well
  - If tablename prefixed to columnname in SELECT, the available query result variable name is tablename.columnname

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CFGRAPH

- **May have heard about CFGRAPH**
  - Can build graphs on the server
    - Using CFQUERY result sets to graph columns
    - Or CFQUERYPARAM to graph non-query data
  - Can build JPG, PNG, or Flash files
    - 12 supported chart types
  - Uses built-in Generator/JRun installed with CF5
    - Can't use this Generator/JRun for any other purpose

- **Did you know**
  - can build drill-down graphs
    - From graph of departments, drill down to employees
  - Can graph more than just CFQUERY resultsets

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CFGRAPH Drill-down

```
<cfquery name="get_depts" dataSource="cfsnippets">
        SELECT Department, COUNT(*) AS count
        FROM Employees
        GROUP BY Department
</cfquery>

<CFGRAPH TYPE="BAR" QUERY="get_depts" VALUECOLUMN="count"
        ITEMCOLUMN="Department" SCALEFROM="0" SCALETO="10"
        ITEMLABELORIENTATION="HORIZONTAL"
        TITLE="Number of Employees by Department" BARSPACING="15"
        GRAPHHEIGHT="#height#" GRAPHWIDTH="#width#" DEPTH="15"
        COLORLIST="##003399,##99ccff,##339900,##660066" GRIDLINES="4"

        URL="cfgraph_drill.cfm?dept="
        URLCOLUMN="department">
</cfgraph>
<!--- continued on next slide --->
```

- **To do drill-down, just add URL and URLCOLUMN attributes to CFGRAPH**
  - Names template to call when column is clicked on and data value to pass on that URL

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Drill-down (cont.)

```
 <!--- continued from previous next slide --->
<cfif isdefined("url.dept")>
            <cfquery name="get_emps" dataSource="cfsnippets">
                    SELECT *
                    FROM Employees
                    where Department = '#url.dept#'
            </cfquery>

            <cfoutput>
            <h2>Employees in Dept #url.dept#</h2>
            </cfoutput>

            <cftable QUERY="get_emps" HTMLTABLE="Yes">
            <cfcol TEXT="#FirstName#">
            <cfcol TEXT="#lastname#">
            <cfcol TEXT="#email#">
            <cfcol TEXT="#phone#">
            </cftable>
</cfif>
```

- **When graph shown and value bar clicked, runs this code**
  - Takes passed in URL.Dept value and does look up
  - Uses CFTABLE to format query result
    - This isn't new in CF5, but many don't know about it

Graph of Non-CFQuery Results

- **Can graph a CFDIRECTORY resultset**

```
<CFDIRECTORY ACTION="LIST" DIRECTORY="#expandpath(".")#" NAME="getfiles">
<cfquery DBTYPE="query" NAME="getonlyfiles">
        select * from getfiles
        where type = 'File'
</cfquery>
<cfquery DBTYPE="query" NAME="gettotal">
        select sum(size) as total from getonlyfiles
</cfquery>
<h4>Directory Total Size in Bytes:
<cfoutput>#numberformat(gettotal.total)#</cfoutput></h4>
<p>
<cfgraph QUERY="getonlyfiles" ITEMCOLUMN="name" VALUECOLUMN="size" SCALETO="10000"
TYPE="Bar">
</cfgraph>
```

CFGRAPH Issues

- **Bug in CFGRAPH**
  – If SCALETO attribute not specified, will crash the graphing server if column has a non-numeric value
- **HotFix Available for another bug**
  – ColdFusion Becomes Unresponsive when Zeros Are Used in the cfgraph Tag (KB 22253)
- **Upgrade Issues:**
  – Compound-Word Color Name Values Within the cfgraph and cfgraphdata Tag Attributes (KB 21369)
  – CFGraph Causes the "Can't Connect to Jrun Connector Proxy" Error (KB 21301)
  – Using the cfgraph Tag With O'Reilly Website Web Server(KB 21400)

Verity K2 Engine Enhancements

- **May have known of new Verity K2 engine**
  – Runs in separate server from CF, can have multiple servers
  – Supports large number of documents indexed
  – Supports newer document types
  – Includes international language packs
- **But did you know**
  – Supports site spidering and more
  – And CF now automatically locks Verity operations
    • Concurrent read/write operations on an index are protected from stepping on each other

Verity K2 Details

- **New Verity command-line tools**
  - such as the "mkvdk" and "VSpider" utilities
  - To use these, must add appropriate Verity library paths to the OS path
    - PATH (Windows), LD_LIBRARY_PATH (Solaris and Linux) or SHLIB_PATH (HP -UX) environment variable
  - See "documentation update" for more detail for each OS
- **Verity K2Server file locations**
  - on Windows platforms is C:\cfusion\verity\<platform>\bin
    - where platform <platform> identifies the version of the OS that is running; for example, _nti40 for Windows NT 4.
  - on UNIX opt/coldfusion/verity/<platform>/bin
- **Server Admin Documentation**
  - Verity K2 Server Administration Documentation (KB 21648)

Enhanced Administrator Interface

- **May have known**
  - New design, streamlined functionality, online help
  - Every change to admin configuration is tracked for reporting purposes
- **Did you know**
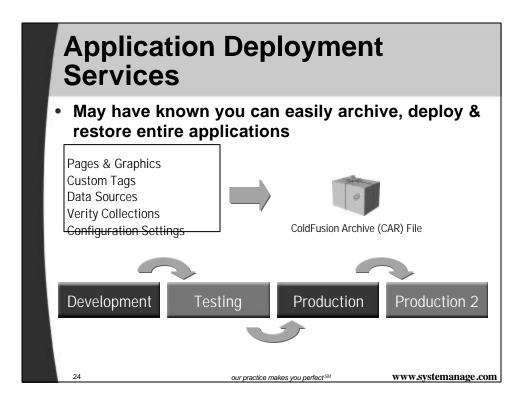 - Can now add custom features to administrator

Extending the CF Admin

- **Can now add your own tools to CF Admin**
  - Creates new Custom Extensions option on Tools tab
    - Lists any custom-defined templates as hyperlinks
- **To control these, create extensionscustom.cfm**
  - Store in admin root (*webroot*/CFIDE/administrator/)
  - Simply create html hyperlinks (and <br>) tags, as in:
    - Graph Logs
  - Template should have no other html tags

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Application Deployment Services

- **May have known you can easily archive, deploy & restore entire applications**

Pages & Graphics
Custom Tags
Data Sources
Verity Collections
Configuration Settings

ColdFusion Archive (CAR) File

| Development | Testing | Production | Production 2 |

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More Archive/Deploy Ideas

- **Did you know**
  - In addition to moving among test/dev/prod
- **Can consider using this also for**
  - deploying in clustered environment
  - restoring over mistakes in production
  - deploying local development archive to remote server
  - sending app to support for debugging
- **Also, deployment can be made from remote archive (accessed over the internet)**
  - Could grab example apps from a remote site
- **Can schedule builds to take place recurrently**

Montor/Archive Issues

- **The monitor and archive features require services**
  - ColdFusion Monitoring Service
  - ColdFusion Management Service
  - ColdFusion Management Repository Server
- **These are actually JRun-enabled services**
  - CF5 installs JRun automatically and invisibly
  - Can't use this JRun for any other purposes
- **Bug has been encountered by some**
  - services sometimes cause high CPU/swapping
- **Hot Fix Available: Management Logs Can Cause High CPU Utilization (KB 21807)**

Merant ODBC Drivers

- **May have heard about new Merant "DataDirect Connect ODBC" drivers**
- **Did you know**
  - There is no driver for MS Access specifically
    - Though many for most other popular databases
  - There is a driver for reading text (and Excel & other) files
- **Docs are available, if not obvious**
  - See *Installing and configuring CF* Chapter 6, for detailed table listing OS/DBMS support
  - See also *Advanced CF Admin*, Chapter 1 for more info on drivers
  - Available detailed Merant documentation
    - cfusion/bin/odbcref.pdf

CFFLUSH

- **May know that CFFLUSH can be used to flush output to browser early (before page is finished)**
  - CFFLUSH sends any output available at time of flush
    - or can send when x bytes generated

  ColdFusion Server 5

- **Did you know**
  - CFFLUSH can be used to create "progress meters"
  - See "Understanding Progress Meters in ColdFusion 5"
    - http://www.allaire.com/handlers/index.cfm?ID=21216&Method=Full

CFFORM Enhancements

- **May know that CFFORM applets were "enhanced"**
- **Did you know**
  - CFINPUT and CFTEXTINPUT now support regular expression validation
  - New VALIDATE attribute value, "regular_expression", and PATTERN attribute as in:

    ```
    <cfform ACTION="##">
    <cfinput TYPE="Text" NAME="phone"
    VALIDATE="regular_expression"
    pattern="^(\(?\d{3}\)?)?\s?\d{3}\s?\d{4}$">
    <input TYPE="Submit">
    </cfform>
    ```

  - Can use any valid CF Regular expression
  - Difference in this case from CFINPUT VALIDATE="telephone" is that it doesn't require the area code and also allows parens for the area code

---

CFDump

- **May know that CFDump is great for dumping all elements within query/array/structure**

```
<cfquery name = "GetSalaries" datasource = "CompanyInfo">
 SELECT Departmt.Dept_Name,
   Employee.Dept_ID,
   Employee.Salary
 FROM Departmt, Employee
 WHERE Departmt.Dept_ID = Employee.Dept_ID
 ORDER by Dept_name, Salary
</cfquery>

<cfdump VAR="#getsalaries#">

<cfdump VAR="#session#">

<cfdump VAR="#application#">
```

- **Did you know**
  - you can click on structure names to expand/collapse them!

CFSaveContent

- **May know that CFSAVECONTENT can save content between its tags for further processing**

```
<cfsavecontent VARIABLE="hold">
        test data
</cfsavecontent>

<cfoutput>#hold#</cfoutput>
```

- **This is a trivial example**
- **But did you know**
  - CFSAVECONTENT can be used for caching only a particular "part" of a page
    - Versus CFCACHE which caches the whole page
    - See "Simple Caching Techniques with CFSAVECONTENT" http://www.allaire.com/handlers/index.cfm?ID=21422

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Other New/Enhanced Tags

- **CFObjectCache**
- **CFLOG**
- **New CFFTP Action attribute value: "Removedir"**
- **GetHTTPRequestData() function**
  - Useful for SOAP processing
- **GetException() function**
  - For use with java object exception handling
- **Dynamic Java Class Loader**
- **New Dynamic DB connections**
  - dbtype="dynamic" and connectstring attributes
  - Also referred to as "dsn-less" connections

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Other Enhancements

- **Some new options can be disabled in Basic Security**
  - Including support for Tag/attribute restrictions
    - Rather than previous "whole tag" restrictions
- **Multiple Custom Tag directories**
  - See Admin>Server>Extensions> CustomTag Paths
- **Enhanced COM Integration**
- **Rearchitected CORBA support**
- **Support for SuSE Linux and Cobalt RAQ, XTR, and Qube servers**
- **...to name a few**

Studio 5 Features

- **Two file resource panes**
- **New "help" tab when viewing tag/function help**
- **Right-click on cfinclude/cfmodule opens file**
- **Auto backup for file maintenance**

Problems Fixed

- **Problems in previous release now fixed**
  - Duplicate() function works as expected
  - Improperly formatted file in mail spool no longer causes all spool files to never be sent
  - "Disable database connection" in Admin now works as expected
  - CFFILE no longer converts spaces in file names to underscores
  - ... to name a few, and there are many more
    - See Release Notes under "Resolved Issues"

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Some Other Issues

- **While some things have been fixed, others are broken**
  - Several HotFixes available
    http://www.allaire.com/Handlers/index.cfm?ID=20371
- **Underlying applet used for CFFORM tags (slider, tree, etc.) uses a signed certificate that expired 12/16/01**
  - Macromedia coming up with new patch for that
  - Watch
    http://forums.allaire.com/coldfusion/messageview .cfm?catid=3&threadid=235225

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Slide 37

• **Where to Learn More**

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Learning More

- **Information spread over several documents!**
- **Documentation**
  - New manuals ("Installing and Configuring", "Advanced Admin")
    - Bundled in print with CF server purchase
    - Installable as HTML with server
    - Available online as PDF at MACR CF5 site
- **CF Admin Help**
  - Not available in printed form
  - Some topics discussed only there
  - Can setup shortcut to point to:
    - http://<servername>/CFIDE/Administrator/help/cfadminhelp.htm

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Learning Still More

- **Several Resources on MACR CF Product Overview page**
  http://www.macromedia.com/software/coldfusion/
  - New Features Document
  - Upgrade Guide
  - Evaluator's Guide
  - System Requirements
  - FAQ
  - Edition Comparison Matrix
  - Performance Brief
  - Reviews and Awards
  - Release Notes
    - Updated version over those offered on CD & at overview site
    - http://www.allaire.com/Handlers/index.cfm?ID=21158&Method=Full
  - Documentation Errata

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"CF 5 In Depth" Seminar

- **Couldn't cover all details in this brief overview**
  - Despite offering several details
  - Gathered from the several resources and extensive testing
- **Still more to cover, and many more details**
  - Offering day-long seminar on-site, perhaps public
    - More new features, details on using features
    - More about solving problems not well-documented
    - Deprecated and Enterprise-only features
    - Lots more
-

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Contact Information

- **Contact for follow-up issues**
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  Also available for
  - Training (custom or pre-written)
    - CF, DB, Jrun/J2EE, Javascript, wireless, and more
  - Consulting (very short-term)
    - best practices, architecture, setup
  - Developer Group Mentoring

Q&A

?